

## **Kudzu Eradication Plans**

### **Factors to consider:**

1. Does the site have legumes or desirable plants other than kudzu? (i.e. Redbud trees, Locust trees)
2. Is tree preservation desired?
3. What type of soil does the site have? Is the leaching potential high?
4. What is the distance to the nearest surface water?

### **Plan A: Sites without surface water problems, low leaching potential.**

There are a number of active ingredients that can be used for kudzu control at these sites. Initial applications should be performed in mid August to increase translocation of products towards the kudzu root system. Follow up applications may be necessary to retreat green areas not affected by the first application and should occur 2-3 weeks after initial application in the first year of the program. Subsequent years will usually only require one treatment during the month of August. It is a good idea to mix a compatible nonionic surfactant with herbicides to infiltrate the cuticle of kudzu and increase herbicide absorption. Herbicides should be applied using high volume, low active ingredient methods of applications and complete coverage of kudzu foliage is desirable to ensure the best results. Large vines climbing trees can be cut and the stumps can be treated with herbicide within 1 hour of cutting to prevent re-sprouting. This will minimize the spray drift potential by eliminating the need to spray kudzu foliage located in trees. It is not necessary to remove vines from trees. Kudzu has soft wood and the vines will decompose in a few years.

**Labeled Products for this plan:** Escort XP<sup>®</sup> (metsulfuron methyl), Garlon 3A<sup>®</sup> (triclopyr), Transline<sup>®</sup> (clopyralid)

**NOTE:** If you wish to protect trees, see Plans C and Plans D.

### **Plan B: Sites in close proximity to surface water, sandy soils, high leaching potential**

Sites close to bodies of water or sites that have surface water warrant careful selection and use of herbicides. Unfortunately these situations limit the use of many herbicides. Landowners and applicators should only use products that are labeled for use around the edge of ditch banks and close proximity of bodies of water. **DO NOT SPRAY HERBICIDE DIRECTLY ONTO WATER WHEN THE PRODUCT IS NOT LABELED FOR THIS PURPOSE.** Sites that have sandy soils with a high probability of leaching and erosion gullies that lead to rivers and streams should be treated the same as sites that are in close proximity to surface water. Generally, herbicides not labeled for such sites should not be applied within 150 feet of a body of water. If there is any question as to whether or not an herbicide will enter a body of water, choose such a product that is labeled for use near water. Ultimately it is the applicators legal responsibility to use

products in a safe manner and according to label directions. Unfortunately many of the herbicides labeled for use near water may not be as effective as other herbicides and they may require more follow up applications. Parts of kudzu sites, that are greater than 150 feet from surface water, can be treated with plan A.

Initial applications should be performed in mid August to increase translocation of products towards the kudzu root system. Follow up applications may be necessary to retreat green areas not affected by the first application and should occur 2-3 weeks after initial application. Depending on efficacy, subsequent years may require two applications per year in late summer. Herbicides should be applied using high volume, low active ingredient methods of applications and complete coverage of kudzu foliage is desirable to ensure the best results. Large vines climbing trees can be cut. This will minimize the spray drift potential by eliminating the need to spray kudzu foliage located in trees. It is not necessary to remove vines from trees. Kudzu has soft wood and the vines will decompose in a few years.

**Labeled products for this plan:** AquaMaster<sup>®</sup> (glyphosate [2]), Glyphomax Plus<sup>®</sup> (glyphosate [1]), Roundup<sup>®</sup> products (glyphosate [1]), Rodeo<sup>®</sup> (glyphosate [2]), Veteran 720<sup>®</sup> (2,4,D + dicamba [1]), Banvel + 2,4-D<sup>®</sup> (2,4,D + dicamba [1]), Garlon 3<sup>®</sup> [1], Banvel<sup>®</sup> (dicamba [1]).

[1] Cannot be applied directly over water, can be used alone on non-irrigation ditches and canals when dry.

[2] Can be applied directly over water and around lakes, ponds, ditch banks, etc.

### **Plan C: Sites where tree preservation is desired, without leguminous tree species**

Chlopyralid (Transline<sup>®</sup>) is the only active ingredient that is labeled for kudzu control that is safe to use around desired tree species. This product is specific to the Legumes (the Bean Family) but it will also stress plants in the Compositae (Aster Family) and Polygonacea family (Smartweed Family). It can be safely sprayed onto kudzu in trees as long as those trees are not legumes. Trees in Indiana that belong to the legume family include black locust, honey locust, Kentucky coffee, mimosa and eastern redbud. These trees will be killed by Chlopyralid applications. Chlopyralid is highly mobile in soils and should not be used near surface water or areas that have sandy soils with a high leaching potential. Initial applications should be performed in mid August to increase translocation of products towards the kudzu root system. Follow up applications may be necessary to retreat green areas not affected by the first application and should occur 2-3 weeks after initial application in the first year of the program. Subsequent years will usually only require one treatment during the month of August. It is a good idea to mix a compatible nonionic surfactant with herbicides to break the cuticle of kudzu and increase herbicide absorption. This product should be applied using high volume, low active ingredient methods of applications and complete coverage of kudzu foliage is desirable to ensure the best results.

**Labeled products for this plan:** Transline®

**Plan D: Sites where tree preservation is desired, with leguminous tree species.**

Herbicides may need to be applied in a more labor intensive and selective manner if numerous desired leguminous trees such as black locust, honey locust, Kentucky coffee, mimosa and redbud exist on a kudzu site. These include high volume hand applications and stump cut applications. Transline® is safe to use on most trees but it will kill leguminous trees. Glyphosate, the active product in Roundup® and similar products will injure desirable trees and plants when solution comes in contact with green foliage. Precise applications can be made to minimum injury to desired plants, avoid contact with green foliage of desired plants. Kudzu vines that are growing up leguminous trees should be cut and the stumps should be immediately treated with a concentrated triclopyr solution. (See label instructions on this technique). This application can be performed when kudzu is dormant in late winter. Kudzu immediately around the base of leguminous trees should be treated with glyphosate or an herbicide that does not leach into the soil and remain active. The remainder of the patch can be treated with Chlopyralid.

**Labeled products for this plan:** Transline®, Roundup® products, Rodeo®

**Plan E: Sites where total vegetation control is desired or an acceptable outcome:**

For sites where total vegetation control is desired, picloram can be applied during August or September. Follow up applications are usually not necessary with this highly effective product. However, it should not be used near water and applicators must pay particular attention to drift from spray or vapors. It will kill virtually all trees and understory plants at the site and will remain active in the soil for up to two years after application. **Extreme care should be used when applying this product.**

**Labeled products for this plan:** Tordon RTU® (picloram)

**DISCLAIMER:**

**Mention of Trade Name implies no endorsement of a single product or associated company.**

**Always read pesticide labels before performing any pesticide application.** Label information can be obtained from suppliers, or on the web at [www.cdms.net](http://www.cdms.net) and [www.greenbook.net](http://www.greenbook.net). For a complete list of registered products contact the Office of the Indiana State Chemist.

**Alternative species and Erosion control:** In many cases, native vegetation will decolorize a site once the kudzu is removed. However, this may not be true for sites with poor soil conditions or where soil erosion occurs. A soil erosion plan should be

implemented at these sites and an alternative, non-invasive, non-allelopathic plant species should be used to hold the soil until native vegetation can become established. **Contact your local soil conservation district for assistance with erosion control and replacement species.**

<b>Herbicide</b>	<b>Application Rate</b>	<b>Comments</b>
AquaMaster (glyphosate)	<b>Broadcast</b> – 3 qt/A  <b>Spot treatment</b> – 1.5% v/v with water  Requires a non-ionic surfactant at 0.25% v/v.	<b>Plan B.</b> Can be applied over or near standing water. Treatment of aquatic weeds resulting in large amounts of decomposing vegetation can deplete oxygen levels in the water resulting in possible fish kill. Can injure desired plants if glyphosate comes in contact with foliage. Spray to wet, but not to the point of run off. Do not apply within 0.5 of water intake. Repeat applications will be required. Monsanto EPA 524-343
Banvel (dicamba)	<b>Spot treatment</b> - Apply 1 to 2 qt/A  <b>Cut surface</b> - paint 1 part Banvel with 1 to 3 parts water with in an hour of cutting  Do not use more than 2 qt/A per year	<b>Plan B.</b> Do not apply directly over water or to irrigation ditches. Can be applied to non-irrigation ditches when ditches are dry. Banvel that comes in contact with broadleaves through direct application or drift will cause injury. Do not reenter treated area for 24 hours. Do not apply Banvel near sensitive crops such as soybean, grapes, tomatoes, etc. Do not use when temperatures are expected to be above 85 degrees F. Use coarse textured spraying methods. Re-treatment will be necessary. Micro Flo, EPA 5136-289
Banvel + 2,4-D (dicamba + 2,4-D)	<b>Cut surface</b> – paint undiluted to cut vines within an hour of cutting	<b>Plan B.</b> Do not apply directly over water or to irrigation ditches. Can be applied to non-irrigation ditches when ditches are dry. Banvel + 2,4-D that comes in contact with broadleaves through direct application or drift will cause injury. Do not reenter treated area for 48 hours. Do not apply Banvel + 2,4-D near sensitive crops such as soybean, grapes, tomatoes, etc. Do not use when temperatures are expected to be above 85 degrees F. Use coarse textured spraying methods. Re-treatment will be necessary.
Escort XP	<b>Broadcast</b> - Apply 3	<b>Plan A.</b> Do not apply directly to water or to

(metsulfuron-methyl)	to 4 oz/A <b>Spot treatment</b> - Use a 1% v/v mixture  Do not use more than 4 oz/A per year	areas where surface water is present. Do not apply on irrigation ditches. Do not apply on desirable plants. Can be applied on dry ditch banks or drainage ditches. Kudzu may become less susceptible during drought or during periods of cold temperatures. Do not enter until spray dries. Re-treatment over more than one year will be required. DuPont EPA 352-439
Garlon 3A (triclopyr)	<b>Spot treatment</b> - 2 to 3 gallons in enough water to make 20 to 100 gallons of water  <b>Stump cut</b> - spray or paint either undiluted or in a 1:1 ratio with water on cut vines within 1/2 hour after cutting.	<b>Plan A, B.</b> Do not apply directly to water or to areas where surface water is present. Do not reenter treated area for 48 after treatment. Will control desired legumes. Can be applied on dry non-irrigation ditch banks and roadsides. Do not reenter treated areas for 48 hours after treatment. Dow AgroSciences EPA 62719-37
Glyphomax Plus (glyphosate)	<b>Broadcast</b> – 4 qt/A  <b>Spot treatment</b> – 2% v/v with water.  Does not require surfactant.	<b>Plan B, D.</b> Do not apply directly over water or to irrigation ditches. Can be applied to non-irrigation ditches when ditches are dry. Can injure desired plants if glyphosate comes in contact with foliage. For Plan D, apply as a spot treatment only. Do not reenter treated area for 4 hours after treatment. Spray to wet, but not to the point of run off. Repeat application will be required. Dow AgroSciences EPA 62719-322
Rodeo (glyphosate)	<b>Broadcast</b> – 6 pt/A  Spot treatment – 2% v/v with water	<b>Plan B, D.</b> Can be applied over or near standing water. Treatment of aquatic weeds resulting in large amounts of decomposing vegetation can deplete oxygen levels in the water resulting in possible fish kill. Can injure desired plants if glyphosate comes in contact with foliage. For Plan D, applied as a spot treatment only. Spray to wet, but not to the point of run off. Do not apply within 0.5 of water intake. Repeat applications will be required. Dow AgroSciences EPA 62719-324
Roundup	<b>Broadcast</b> – 2.5 to	<b>Plan B, D.</b> Do not apply directly over water or

Weathermax (glyphosate)	3.3 qt/A  <b>Spot treatment</b> – 1.5% v/v with water.  Does not require surfactant.	to irrigation ditches. Can be applied to non-irrigation ditches when ditches are dry. Can injure desired plants if glyphosate comes in contact with foliage. For Plan D, applied as a spot treatment only. Do not reenter treated area for 4 hours after treatment. Spray to wet, but not to the point of run off. Repeat application will be required. Monsanto EPA 524-537
Tordon RTU (picloram + 2,4-D)	<b>Cut surface</b> - paint the surface of the cut vine with a Tordon RTU within 1/2 hour of cutting. Do not dilute further.	<b>Plan E</b> - Trace amounts of picloram can remain in the soil for up to 2.5 years, use picloram carefully. Do not apply directly to water or to areas where surface water is present. Picloram is toxic to susceptible plant species in trace amounts; care should be taken not to drift. Picloram is soluble and can move off sight in run off. Do not reenter treated area for 48 hours after treatment. Do not use more than 4 gallons over a two-year period. Do not use soil that has been treated or use treated plant material for compost or mulch. Do not use if desired legumes are in the area. Untreated trees in the vicinity can sometimes be affected due to taking picloram up through their roots. Dow AgroSciences EPA 62719-31
Transline (clopyralid)	<b>Broadcast</b> - 2/3 to 1 1/3 pt/A  <b>Spot treatment</b> - 1/4 to 1/2 fl oz in 1 gallon or more of spray, will treat 1000 sq. ft.	<b>Plan A, C, D.</b> Do not apply directly to water, or to areas where surface water is present. Do not reenter treated area for 12 hours after treatment. Established grasses are tolerant, but new grass seedlings may be injured. Periods of drought or near freezing temperatures may reduce efficacy. Application over growing conifers may cause some needle curling, the use of a surfactant will increase injury, and firs may be more sensitive. Will damage plants in the legume family (locust, mimosa, redbud, and lupine) or box elder. Dow AgroSciences EPA 62719-259
Veteran 720 (dicamba + 2,4-D)		<b>Plant B.</b> Do not apply directly to water, to areas where surface water is present. Can be applied to non-irrigation ditches when ditches are dry. Veteran 720 that comes in contact with broadleaves through direct application or

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drift will cause injury. Do not reenter treated area for 48 hours. Do not apply Veteran 720 near sensitive crops such as soybean, grapes, tomatoes, etc. Do not use when temperatures are expected to be above 85 degrees F. Use coarse textured spraying methods. Re-treatment will be necessary. Riverdale EPA 228-295

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**Prepared in May of 2006 by:**

**Kenneth W. Cote**

Nursery Inspector  
Indiana DNR,  
Division of Entomology and Plant  
Pathology  
Bloomington Field Office  
PO Box 29 Clear Creek, IN 47426  
812-332-2241

**Glenn Nice**

Extension Weed Science  
Purdue University  
Lilly Hall of Life Sciences  
915 W. State Street  
West Lafayette, IN 47907-2054  
765-496-2121